

## **Hardware River Water Quality Improvement Plan**

First Community Meeting: North Garden Fire Hall

April 9, 2015

### ***PARTICIPANTS***

Lonnie Murray  
John Smith  
May Sligh (VADEQ)  
Brian Walton (TJSWCD)  
Werner Hambsch  
Steve Clark  
Charles Seilheimer  
Michael Hudson  
Peter Dutnell

Liz Palmer  
Ann Smith  
Mary Tillman  
Emily Nelson (TJSWCD)  
Melissa Clark  
Debra Webb  
Jeff Gentry  
Jimmy Powell

Martin Johnson (TJSWCD)  
Don Kain (VADEQ)  
Dorothy Tompkins  
Kory Kirkland (NRCS)  
Nesha McRae (VADEQ)  
David Webb  
Andy Wilson  
Cameron Thomas

### ***MEETING SUMMARY***

The meeting began with a welcome from Nesha McRae, from the Virginia Department of Environmental Quality (VADEQ). Nesha provided an overview of the water quality problems observed in the Hardware River. Monitoring conducted by VADEQ has shown that the river (both the North Fork and the mainstem, also referred to as the Lower Hardware River) are violating the state's water quality standard for *E. coli*, which Nesha explained is a human health concern when people have primary contact with the water. A TMDL study was completed for the Hardware River in 2007. The results of this study were shared with attendees including a "de-listing" reduction scenario and a "0% violation" scenario. Nesha explained that as part of the study, an assessment of all of the sources of *E. coli* in the watershed was completed, and then reduction scenarios were developed for the different sources outlining what would be needed in order to meet the water quality standard. It was explained that while direct deposition of bacteria into the creeks by wildlife is a significant source in the watershed, it will not be addressed in the water quality improvement plan, which will be designed to address those sources linked to humans (either directly or through land management practices). Nesha outlined the process that will be used to develop the water quality improvement plan and stressed the importance of public involvement. Implementation of the plan will be conducted on a voluntary basis, so local support is very critical to the overall success of this effort.

Several participants in the meeting posed questions about water quality in the Hardware River and its tributaries, wanting to know if the best management practices that have been installed in the watershed recently have resulted in water quality improvements. DEQ staff explained that while the data does not show significant improvements in *E. coli* concentrations in the river, this could be a result of where practices are located versus monitoring stations, or a result of weather patterns in recent years. One participant asked if there was a way to distinguish between bacteria coming from wildlife waste, humans or livestock. DEQ staff explained that there are ways of doing this, and that the primary method that the state has used in the past is to look at levels of resistance of bacteria when exposed to

different types of antibiotics. However, this is very costly and often times misleading because one sample only represents a snapshot in time, and may also be disproportionately influenced by even a small source near the sampling point. Consequently, DEQ does not use this methodology in the monitoring program much anymore.

A participant asked whether Walnut Creek, a local swimming area, is safe to swim in. DEQ staff explained that swimming advisories are typically issued by the Health Department and recommended that those with concerns about safety check with the local office.

One attendee commented that they were perplexed by the high contributions of bacteria from wildlife in the watershed that were identified in the 2007 study and asked why this was the case. DEQ staff responded that a number of variables are considered when estimating bacteria loading rates from wildlife. It could be a result of the type of habitat available for wildlife in the watersheds, the hydrology of the streams, or other factors including growing deer populations and resident Canada geese. Another participant commented that the large portion of unbuffered streams in the watershed may be a factor as well.

It was suggested that DEQ make water quality data available to the public online. DEQ staff explained that these data used to be available on the DEQ webpage, but that some changes in data platforms had been made that made it challenging to keep the data up on the web. Ultimately the plan is for the agency to get the data back online. In the meantime, the group discussed the possibility of distributing data for the Hardware River to meeting attendees, or possibly posting the data for the Hardware on the DEQ TMDL webpage. Nesha McRae offered to look in to possibilities for this. She also noted that in other watersheds where similar plans have been developed, water quality update meetings have been held in order to share progress with the local community. This is something that could be considered for the Hardware River as well. One participant asked how the water quality standard for *E.coli* was developed. DEQ staff explained that the Environmental Protection Agency provides guidelines to the states, which are charged with developing these standards. The *E.coli* standard is designed to minimize the risk of illness or infection upon having primary contact with the water. Virginia's standard is a two part standard, with an instantaneous criteria of 235 colony forming units (cfu) of *E. coli* per 100 mL of water, and a geometric mean criteria of 126 cfu/100mL.

A participant asked how this local TMDL effort related to the Chesapeake Bay TMDL. DEQ staff explained that the Chesapeake Bay TMDL is designed to address nutrient and sediment pollution, while this effort is targeted at bacteria. However, there are definitely areas of considerable overlap between what needs to be done on the ground to meet Bay TMDL goals versus local goals to restore the Hardware River.

The group dismissed for a five minute break after which attendees reconvened in two breakout sessions: an agricultural and a residential working group.

**Hardware River Water Quality Improvement Plan**  
Agricultural Working Group Meeting: North Garden Fire Department  
April 9, 2015

***PARTICIPANTS***

Mary Tillman	Dorothy Tompkins	Peter Dutnell
Brian Walton (TJSWCD)	Emily Nelson (TJSWCD)	Kory Kirkland (NRCS)
Werner Hambsch	Melissa Clark	Nesha McRae (VADEQ)
Steve Clark	Debra Webb	David Webb
Charles Seilheimer	Jeff Gentry	Andy Wilson
Michael Hudson	Jimmy Powell	Cameron Thomas

***MEETING SUMMARY***

Nesha McRae, from the Virginia Department of Environmental Quality (VADEQ) provided an overview of the role of the agricultural working group in the planning process. She explained that the group is typically made up of local farmers, Soil and Water Conservation District and Natural Resources Conservation District staff, along with representatives from other organizations that work in agricultural conservation in the region. The group moved on to discuss the general status of agriculture in the Hardware River watershed today. It was agreed that there has been a general decrease in livestock numbers in the region in recent years. Suburban encroachment as identified as a real problem in the area. It was noted that there is very little cropland in the watershed any more, and that over the past 20 years, the cattle population in the watershed has declined by about 50%. This is largely due to the fact that until last year, cattle have not been economically profitable for many farmers in the region.

One participant noted that you don't see a lot of community investment in the management of natural resources. The majority of landowners in the watershed who are willing to exclude livestock from the stream have already done so. Now we are left with a large number of small farms with property owners who spend large amounts of money maintaining their lawns, but will do little to implement conservation practices. Many landowners cannot afford to set a fence back 35 feet from the stream, while others have concerns about nuisance wildlife and maintenance issues that might come with installing livestock exclusion fencing. Flooding was identified as another deterrent to stream exclusion fencing as you move further downstream in the watershed. Private funds from a foundation have been used to install fencing in the watershed in the past, but this only went so far. Several participants expressed concern about providing off stream water for livestock when fencing is installed. One landowner shared his experience with the installation of fencing and explained that he ended up tapping in to the well for his house in order to provide water for the cattle. Another participant asked whether he had concerns about depleting the aquifer in using this approach. He explained that he had set his system up with a back up to provide water for his livestock should this become an issue. Another landowner responded that wells are getting more and more expensive to drill as people have to go down further and further (drillers used to go down about 100 feet, now it is more like 200 ft).

One participant noted that there are other conservation practices that landowners can implement besides livestock exclusion. She suggested considering strategies that are more regenerative such as

planting warm season grass buffer strips along the stream and implementing rotational grazing. The group discussed the portion of hay/pasture in the watershed that is actually grazed. It was noted that some pasture in the watershed is leased for grazing, but not a very large amount. There is a lot of fallow pasture in the watershed along with quite a few 10-20 acre parcels that are bush hogged or cut for hay in order to keep the land in ag land use for tax purposes. A number of these smaller property owners have removed boundary fencing on their property with the intention of solely using the land for hay. One participant noted that the landowner next to them had recently done this with about 2,000 acres of land. It was stated that there is quite a bit of overstocking in the watershed, particularly on horse farms along with some cattle.

A landowner from the Bundoran Farm mentioned that two phases of fencing were recently completed on the property, and that some water quality monitoring has been done by volunteers to evaluate the improvements in water quality that occur as a result of getting livestock out of the creek. A control station has been established for monitoring along with stations below the BMP sites and significant improvements in water quality have been observed. One landowner estimated that there are somewhere between 100 and 200 cattle on the farm at a given point in time. Another landowner expressed similar concerns about the availability of groundwater in the region as those expressed earlier in the meeting. Water testing was suggested as a good outreach tool in terms of communicating the benefits of conservation practices and getting volunteers from the local community involved.

The group discussed the best ways to get the word out about conservation programs to local farmers. One landowner noted that as a new landowner in the watershed who is interested in implementing different conservation practices, it is very difficult to navigate through different programs and identify the best people to talk to about different practices. He suggested that a centralized location be identified (could be a website or a brochure) where a landowner could identify the appropriate contacts for different types of conservation measures (e.g. conservation easements, forestry, agricultural best management practices). Mailings were identified as a good way to reach local landowners with information. It was also suggested that new landowners could be directed to active farms to see how agricultural best management practices actually work. One participant mentioned that she is currently working on plans for an instructional farm where interested landowners could go to learn more about regenerative agricultural practices such as rotational grazing. Another participant noted that she is a Master Gardener and that they have had great success with distributing brochures in displays that they have set up at local plant nurseries, Southern States and Lowes Garden Center. A brochure could be developed for the Hardware River watershed that identifies the water quality issues facing the river along with the types of practices that need to be done to correct the problem.

In order to gauge local interest in different BMP options and identify the most suitable livestock exclusion fencing systems for inclusion in the plan, a survey was distributed to meeting participants. Everyone was asked to rank a series of BMPs along with a series of obstacles to livestock exclusion. The results are summarized in the two tables below:

**Table 1. Potential best management practices for consideration.** Average rankings are shown below (7 total) with 1 being the highest priority practice and 7 being the very lowest priority.

Best management practice	Description	Rank (1-7)
Streamside livestock exclusion fencing	Excluding livestock from streams with fencing, providing alternative water sources or limited access points to the stream	2
Rotational grazing	Establishing a series of grazing paddocks with cross fencing and rotating livestock to maximize forage production while preventing overgrazing	1
Forested streamside buffers	Planting trees and shrubs in strips (35 foot minimum) along streams adjacent to pasture and cropland	5
Grassed streamside buffers	Planting grasses in strips (35 foot minimum) along streams adjacent to pasture and cropland	3
Forestation of crop, pasture or hayland	Convert existing pasture, crop or hayland to forest (hardwood or conifers,	7
Continuous no-till	Cropland is planted and maintained using no-till methods, only effective in reducing bacteria for cropland receiving manure applications (not commercial fertilizer)	4
Manure composting/storage facilities (equine)	Construction of planned system designed to manage solid equine waste from areas where horses are concentrated either through composting or storage	6

**Table 2. Obstacles to streamside livestock exclusion.** Average rankings are shown below (5 total) with 1 being the most common obstacle to address and 5 being the least common obstacle.

Obstacle	Rank (1-5)
The cost of installing fencing and off stream water is too high, even with cost share assistance from federal and state programs	2
Cannot afford to give up the land for a 35 foot buffer	1
General maintenance of fencing is time consuming and expensive	3
Grazing land is rented with short term leases and landowners are not interested in installing and/or maintaining streamside fencing and off stream water	5
People do not trust the government and do not want to work through state and federal cost share programs to installing fencing systems	4

Nesha asked the group about other potential meeting locations in the watershed for the future. She explained that the two groups from the Scottsville and North Garden public meetings would be brought together for one or two more agricultural working group meetings over the next several months. The group was okay with evening meetings at 6:30 or 7:00. Nesha thanked everyone for their participation and the meeting adjourned.

**Hardware River Water Quality Improvement Plan**  
Residential Working Group Meeting: North Garden Fire Hall  
April 9, 2015

***PARTICIPANTS***

Lonnie Murray (TJSWCD Director)	Liz Palmer (Albemarle BOS)	Martin Johnson (TJSWCD)
John Smith	Ann Smith	Don Kain (VADEQ)
May Sligh (VADEQ)		

***MEETING SUMMARY***

May Sligh, from the Virginia Department of Environmental Quality (VADEQ) provided an overview of the role of the residential working group in the planning process. She explained that the group is typically made up of local residential property owners, local Health Department staff, and representatives from other interested citizens groups in the region. The group moved on to discuss septic system maintenance needs and the degree of awareness in the area regarding what is involved in maintaining these systems. It was noted that there are many new homes/properties in the watershed with new septic systems that are functioning properly. The greater concern lies with the older homes in the area that were built when regulations regarding septic systems were not as stringent. A representative from the Thomas Jefferson SWCD noted that the septic system cost share program that is currently in place in the Rockfish River watershed in Nelson County has been very successful. Quite a few failing septic systems have been replaced or repaired, and many homeowners have take advantage of the assistance available to have your septic tank pumped out.

One participant noted that there are a number of residential properties in the watershed that are classified as agricultural where the property owner is just cutting hay. They also mentioned that the Thomas Jefferson SWCD did a survey of riparian buffers in the watershed that is probably available. This information could be helpful in developing the plan. In addition, the SWCD has a program to assist residential property owners with implementation of best management practices called the Virginia Conservation Assistance Program (VCAP). This program could assist homeowners with installing riparian buffers and rain gardens. It was suggested that the CCAP program could be another source for funding buffer plantings, this program is supported through a stormwater utility fee. After further investigation following the meeting, it was determined that this program would not be a good source of funding for buffer plantings in the watershed since it can only be used for projects within the City of Charlottesville. Another participant suggested planning a benefit concert to raise funds to support implementation of conservation practices.

The group discussed potential outreach strategies to share information with residential property owners. Mass mailings were identified as a good tool along with public service announcements on "The Corner" radio station and television stations. Materials could also be posted at local pizza places, wineries and cideries. Participants did not think it would be worthwhile to try to initiate a large scale pet waste education program based on the nature of properties in the watershed. Several participants felt that it might be worthwhile to reach out to any kennels in the watershed though. In addition, the Walnut Creek area was identified as a potential location for a pet waste disposal station(s). Some

people also walk their dogs at the local schools (Walker and Red Hill), so they could be considered as potential sites for pet waste stations as well.

It was mentioned that StreamWatch, a local water quality monitoring organization, has data showing that the more paved surfaces you have in a watershed, the more water quality deteriorates. This information could be shared with residential property owners as well. One participant expressed concerns about the current structure of land use tax credits (for agricultural land) in the watershed. He explained that many property owners will not convert old pasture or cropland to forest because they must maintain at least 20 acres of agricultural land to qualify for ag land use. As a result, many property owners keep land in hay rather than planting trees and streamside buffers. This issue could be discussed by a government working group. Ruritan clubs were identified as another good organization to partner with on outreach efforts. A “septic social” was suggested as a way to make outreach more fun, along with setting up a display at Batesville Day (it should be noted that Batesville is just outside of the watershed, but the event may attract local watershed residents nonetheless).

The group discussed strategies to locate straight pipes in the watershed. The survey conducted by the Thomas Jefferson SWCD was noted as a potential source of information on this topic. A DEQ representative asked whether there were any local ordinances requiring that a septic system be functional when a property changes hands. Participants were not aware of any such requirement. Alternative waste treatment systems are now permitted in Albemarle County, though they were previously prohibited. Participants wondered if they are now on the upswing.

May thanked participants and the meeting was adjourned.